

SECOND SUPPLEMENTAL PRELIMINARY
AMENDMENT AND
REQUEST FOR INTERFERENCE
UNDER 37 C.F.R. § 1.607(a)
U.S. Appln. No. 09/662,181

REMARKS

Claims 33-77 are pending in the present application.

As explained in detail below, new Claims 66-77 have been copied from an issued U.S. patent.

I. Background to the Present Request

Applicant filed a Preliminary Amendment and Request for Declaration of Interference Under 37 C.F.R. §1.607 on September 14, 2000, copying claims from U.S. Patent No. 6,027,766 and requesting that an interference be declared between the present application and the '466 Patent. Applicant filed a Supplemental Preliminary Amendment and Request for Declaration of Interference Under 37 C.F.R. §1.607 on July 16, 2001, copying claims from U.S. Patent No. 6,090,489 and requesting that an interference be declared between the present application, the '489 Patent, and a patent related to the '489 Patent (U.S. Patent No. 6,013,372). Applicant again maintains his request that interferences be declared between the present application and the '766, '489 and '372 Patents in the manner outlined in the previous Requests.

In the present Second Supplemental Preliminary Amendment and Request for Declaration of Interference Under 37 C.F.R. §1.607, Applicants have copied additional claims

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from the U.S. patent identified below and further request that the patent be included in the interference requested with the '766, '489 and '372 Patents.

II. The Request for Declaration of an Interference Under 37 C.F.R. § 1.607(a)

A. 37 C.F.R. § 1.607(a)(1) - Identity of the Intefering Patent

Applicant hereby notifies the PTO that they have presented Claims 66-77 in the present application for purposes of requesting an interference with U.S. Patent No. 6,103,363 to Boire *et al.* ("the '363 Patent"). A copy of the '363 Patent is enclosed as Attachment G.

Newly presented Claims 66-77 correspond to Claims 1, 3-5, 11-15 and 17-19 of the '363 Patent which issued August 15, 2000

B. 37 C.F.R. § 1.607(a)(2) - Presentation of a Proposed Count

The interfering subject matter between the present application and the '363 Patent relates to a coated substrate having photocatalytic-properties. This is the same interfering subject matter as between the present application and the '766, '489 and '372 Patents which was the basis for the Requests filed September 14, 2000, and July 16, 2001. *See*, page 11 of the Request filed September 14, 2000, and page 8 of the Request filed July 16, 2001.

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Applicant again respectfully submits that an alternative claim format for the Count is appropriate. *Orikasa v. Oonishi*, 10 USPQ2d 1996 (Comm'r Pat. & Trademarks 1989).

Attachment E to the Second Supplemental Request filed July 16, 2001, contained a proposed Count which represented the independent claims of both the present Application and the '766 and '489 Patents. Applicants now propose a new Count which is equivalent to the Count proposed in the Second Supplemental Request filed July 16, 2001, but also includes the independent claims copied from the '363 Patent as well as the appropriate independent claims from the '363 Patent. The new proposed Count is Attachment H hereto.

**C. 37 C.F.R. § 1.607(a)(3) - Identification of Claims in the '489 Patent
Corresponding to the Proposed Count**

Applicant identifies Claims 1, 3-5, 11-15 and 17-19 of the '363 Patent as corresponding to the new proposed Count.

**D. 37 C.F.R. § 1.607(a)(4) - Presentation of Claims Corresponding to the Proposed
Count**

Applicant has presented above new Claims 66-77 which correspond to the proposed Count. With regard to any claim of the present application and the '363 Patent identified as corresponding to the proposed Count but not corresponding exactly to the proposed Count, Applicant explains the difference as follows.

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Claims 66-69 and 74-77 of the present application correspond to alternatives of the proposed Count. Claims 7-72 depend from Claims 67-69, respectively, and further define the coating recited in those claims as having a thickness up to 130 nm. Claim 73 depends from Claim 67 and further defines the thin layer recited therein as comprising silicon or silica.

Claims 1, 3-5, 15 and 17-19 of the '363 Patent correspond exactly to alternatives of the proposed Count. Claims 11-13 depend from Claims 3-5, respectively, and further define the coating recited in those claims as having a thickness between 5 and 100 nm. Additionally, Claim 14 depends from Claim 3, and further defines the barrier layer recited therein as being a material selected from a Markush group including silicon oxide.

E. 37 C.F.R. § 1.607(a)(5)(i-ii) - Application of New Claims to the Disclosure

Applicant identifies in Table II below exemplary support in the present application for new Claims 66-77.

In connection with the table, Applicant respectfully submits that, as would be recognized by one skilled in the art, a titanium oxide coating prepared in accordance with the present invention, *i.e.*, at temperatures of 1100°-1320°F/590°-715°C (*see*, page 30 of the specification, lines 28-30), would be at least partly crystallized in the anatase form,

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Further, the coatings prepared in accordance with Examples 1-7 would have titanium oxide crystallites within the range recited in the new claims, as well as be hydrophobic and have a contact angle as presently claimed, and root mean square rugosity as presently claimed.

In this regard, see the Office Action dated July 21, 1999, in the application that matured into the '363 Patent (U.S. Application Serial No. 09/029,855). The Examiner took a consistent position at least with regard to the hydrophilic characteristic of the titanium oxide coating, its contact angle with water and the root mean square rugosity. Namely, the Examiner took the position that these elements were inherent because substantially similar methods were being used to produce the same material. A copy of the Office Action is enclosed as Attachment I.

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TABLE II

New Claims 66-77	Exemplary Support in the Present Application (U.S. Application Serial No. 09/662,181)
<p>66. A coated substrate which is a glass substrate provided on at least a portion of one of its faces with a coating having photocatalytic properties, and comprising</p> <p>titanium oxide at least partly crystallized in the anatase form, and obtained by thermal decomposition of titanium tetrachloride precursors,</p> <p>wherein said coating has a thickness up to 130 nm, and</p> <p>wherein the crystallized titanium oxide is in the form of crystallites with an average size of between 0.5 and 60 nm.</p>	<p>“flat glass substrate” (page 1; lines 8-10; “titanium oxide ... coating” (1; 8-10)</p> <p>“titanium oxide” (1; 8-10); “whereby the mixture is heated” (8; 13-17); “[t]he temperature range at the point of application for the coating is usually about 1100°-1320°F/590°-715°C” (30; 28-30); “corresponding metal tetrachloride” (8; 5)</p> <p>Examples 1-7 (1300 Å = 130 nm) (<i>see</i>, Table 1)</p> <p><i>see</i>, Examples 1-7</p>
<p>67. A coated substrate which is a glass substrate provided on at least a portion of one of its faces with a coating having a photocatalytic properties, and comprising</p> <p>titanium oxide at least partly crystallized in the anatase form, and a thin layer forming a barrier to alkali metals originating from the substrate, and located between said substrate and said coating,</p>	<p>“flat glass substrate” (page 1; lines 8-10); “titanium oxide ... coating” (1; 8-10)</p> <p>“titanium oxide” (1; 8-10); “[t]he temperature range at the point of application for the coating is usually about 1100°-1320°F/590°-715°C” (30; 28-30); “additional coatings may include silicon and silica” (12; 26-27);</p>

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wherein the crystallized titanium oxide is in the form of crystallites with an average size of between 0.5 and 60 nm.	<i>see</i> , Examples 1-7
<p>68. A coated substrate which is a glass substrate provided on at least a portion of one of its faces with a coating having photocatalytic properties, and comprising titanium oxide at least partly crystallized in the anatase form, and</p> <p>wherein said coating is hydrophilic, and has a contact angle with water below 5° after exposure to luminous rays,</p> <p>wherein the crystallized titanium oxide is in the form of crystallites with an average size of between 0.5 and 60 nm.</p>	<p>“flat glass substrate” (1; 8-10); “titanium oxide ... coating” (1; 8-10)</p> <p>“titanium oxide” (1; 8-10); “[t]he temperature range at the point of application for the coating is usually about 1100°-1320°F/590°-715°C” (30; 28-30)</p> <p><i>see</i>, Examples 1-7</p> <p><i>see</i>, Examples 1-7</p>
<p>69. A coated substrate which is a glass substrate provided on at least a portion of one of its faces with a coating having photocatalytic properties, and comprising titanium oxide at least partly crystallized in the anatase form, and</p> <p>wherein said coating has a root mean square (RMS) rugosity between 2 and 20 nm,</p> <p>wherein the crystallized titanium oxide is in the form of crystallites with an average size of between 0.5 and 60 nm.</p>	<p>“flat glass substrate” (1; 8-10); “titanium oxide ... coating” (1; 8-10)</p> <p>“titanium oxide” (1; 8-10); “[t]he temperature range at the point of application for the coating is usually about 1100°-1320°F/590°-715°C” (30; 28-30)</p> <p><i>see</i>, Examples 1-7</p> <p><i>see</i>, Examples 1-7</p>
70. The coated substrate according to claim 67, wherein the coating has a thickness	Examples 1-7 (Table 1)

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up to 130 nm.	
71. The coated substrate according to claim 68, wherein the coating has a thickness up to 130 nm.	Examples 1-7 (Table 1)
72. The coated substrate according to claim 69, wherein the coating has a thickness of up to 130 nm.	Examples 1-7 (Table 1)
73. The coated substrate according to claim 67, wherein the thin layer comprises silicon or silica.	"additional coatings may include silicon and silica""(12; 26-27); "the glass substrate was float glass which had been initially provided with silica coating"(16; 25-27); "the coatings comprise a layer of silicon 58, a layer of silica 60, then a titanium oxide coating 62 on top of the article"(22; 21-23)
74. A multi-layer glazing wherein at least one layer thereof is the coated substrate of claim 66.	"[t]he coating may be applied directly to a substrate or as a layer in a plurality of coatings on a substrate" (32; 7-9);
75. A multi-layer glazing wherein at least one layer thereof is the coated substrate of claim 67.	"[t]he coating may be applied directly to a substrate or as a layer in a plurality of coatings on a substrate" (32; 7-9);
76. A multi-layer glazing wherein at least one layer thereof is the coated substrate of claim 68.	"[t]he coating may be applied directly to a substrate or as a layer in a plurality of coatings on a substrate" (32; 7-9);
77. A multi-layer glazing wherein at least one layer thereof is the coated substrate of claim 69.	"[t]he coating may be applied directly to a substrate or as a layer in a plurality of coatings on a substrate" (32; 7-9);

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F. 37 C.F.R. § 1.607(c) - Identification of Corresponding Claims in the '363 Patent

Applicant has presented claims which correspond to claims of the '363 Patent. Applicant identifies below these claims as well as the number of the corresponding '363 Patent claims.

Newly Presented Claims	Corresponding claims of the '363 Patent
66	1
67	3
68	4
69	5
70	11
71	12
72	13
73	14
74	15
75	17
76	18
77	19

IV. Benefit Dates

In an interference between the present application and the '363 Patent, Applicant should be accorded benefit of the filing date of parent application Serial No. 09/199,539 filed November 25, 1998, as well as grandparent application Serial No. 08/696,203 filed August 13, 1996. The present application is a continuation under Rule 53(b) of the '539 Application which is a

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continuation of the '203 Application, and thus the present application contains the same disclosure as the '539 and '203 Applications.

The '363 Patent was filed as an international application on September 13, 1996.

Hence, in an interference between the present application and the '363 Patent, Applicant (McCurdy) should be designated senior party and Boire *et al.*, the patentee of the '363 Patent, should be designated junior party.

V. Designation of Claims

Claims 1-22 of the '489 Patent should be designated as corresponding to the new proposed Count since they all define the same patentable invention as the new proposed Count.

Similarly, all of the claims pending in the present application including the new claims added in the present Second Supplemental Preliminary Amendment and Rule 607 Request (Claims 66-77 should be designated to corresponding to the new proposed Count since they also all define the same patentable invention as the new proposed Count.

As noted in the previously filed Requests, Applicants filed a continuation application of the parent '539 Application on September 7, 2000, containing the allowed claims of the '539 parent application, *i.e.*, Claims 4, 6-7 and 32-41. *See*, the Notice of Allowance and Issue Fee Due and Notice of Allowability mailed June 15, 2000, in the '539 Application. Allowed Claims 4, 6-7 and 32-41 of the '539 Application all recite a precursor gas mixture containing titanium

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tetrachloride and an ester, the ester having an alkyl group with a β hydrogen. As recognized in the Examiner's Statement of Reasons for Allowance included in the Notice of Allowability in the '539 Application, the prior art does not teach or suggest forming a titanium oxide coating using such an ester.

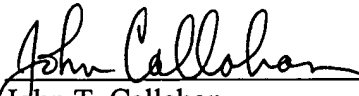
Applicant has filed an Information Disclosure Statement bringing to the Examiner's attention documents that may be relevant. In that Information Disclosure Statement, the Examiner's attention was directed to the continuation application filed September 7, 2000. The continuation application issued as U.S. Patent No. 6,238,738 on May 29, 2001. An additional Information Disclosure Statement is being concurrently filed herewith to cite the '738 Patent. Applicant respectfully submits, however, that the '738 Patent should not be included in the interference and, specifically, should not be designated as corresponding to the new proposed count. This is at least because of the feature of the invention recited in those claims relating to the ester having an alkyl group with a β hydrogen.

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VI. Conclusion

Applicant has copied claims from three U.S. patents, *i.e.*, the '766 Patent, the '489 Patent and now the '363 Patent. Applicant requests that an interference be declared between the present application and the '766, '489 and '363 Patents using the new proposed count and with the claim designations identified herein.

Respectfully submitted,



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